AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1-53. (Cancelled)

54. (Currently Amended) A method of controlling an inner pressure of a tyre mounted on a rim, said method comprising the steps of:

inflating an inner volume of the tyre to an operating pressure at a reference temperature;

admitting a fluid compressed to a first pressure higher than the operating pressure of the tyre at the reference temperature into a tank associated with the rim;

bringing the inner volume of said tyre into communication with said tank when the pressure of the inner volume of said tyre is lower than said operating pressure, by means of at least one mechanical valve, the at least one mechanical valve including:

a diaphragm,

a cap,

a needle, and

an elastic element having an elastic constant, the elastic element controlling the opening of the at least one mechanical valve and being operatively associated with at least one non-deformable closure member designed to open and close at least one port in said valve, and the elastic constant varying within a temperature range of -50°C to +50°C in such manner

that said valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range,

wherein the elastic element exerts a pressure on the diaphragm which brings the cap to act against the needle, thereby causing the at least one non-deformable closure member to open ~~and close~~ the at least one port; and

stopping the communication between said inner volume and the tank when said tyre pressure is substantially equal to said operating pressure.

55. (Previously Presented) The method as claimed in claim 54, wherein said temperature range is about -30°C to about +50°C.

56. (Previously Presented) The method as claimed in claim 54, wherein said temperature range is about -30°C to about +20°C.

57. (Previously Presented) The method as claimed in claim 54, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by at least 10%.

58. (Previously Presented) The method as claimed in claim 54, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by no more than 40%.

59. (Previously Presented) The method as claimed in claim 55, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by at least 10%.

60. (Previously Presented) The method as claimed in claim 55, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by no more than 40%.

61. (Previously Presented) The method as claimed in claim 56, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by at least 10%.

62. (Previously Presented) The method as claimed in claim 56, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by no more than 40%.

63. (Previously Presented) The method as claimed in claim 57, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by at least 20%.

64. (Previously Presented) The method as claimed in claim 58, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by no more than 30%.

65. (Previously Presented) The method as claimed in claim 59, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by at least 20%.

66. (Previously Presented) The method as claimed in claim 60, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by no more than 30%.

67. (Previously Presented) The method as claimed in claim 61, wherein said elastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by at least 20%.

68. (Previously Presented) The method as claimed in claim 62, wherein said plastic element controlling opening of said valve has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by no more than 30%.

69. (Previously Presented) The method as claimed in claim 54, wherein the ratio between said operating pressure of the tyre and said first pressure in said tank is about 0.1 to about 0.6.

70. (Previously Presented) The method as claimed in claim 69, wherein the ratio between said operating pressure of the tyre and said first pressure in said tank is about 0.2 to about 0.4.

71. (Previously Presented) The method as claimed in claim 54, wherein said first pressure in said tank is about 8 to about 12 bars.

72. (Previously Presented) The method as claimed in claim 71, wherein said first pressure in said tank is about 8.5 to about 10 bars.

73. (Previously Presented) The method as claimed in claim 54, wherein said step of bringing the inner volume of said tyre into communication with said tank takes place when the pressure of the inner volume of said tyre is lower than said operating pressure by at least 5%.

74. (Previously Presented) The method as claimed in claim 54, wherein said elastic constant decreases on decreasing of the temperature in said temperature range.

75. (Previously Presented) The method as claimed in claim 54, wherein said elastic constant increases on decreasing of the temperature in said temperature range.

76. (Currently Amended) A wheel having a controlled and compensated pressure, comprising:

a rim associated with a tank adapted to be filled with a fluid to a first pressure;

a tyre mounted on said rim and having an inner volume inflated to an operating pressure, said operating pressure being lower than said first pressure; and

at least one valve adapted to regulate communication between said tank and the inner volume of said tyre, said valve comprising:

a diaphragm,

a cap,

a needle, and

at least one elastic element operatively associated with at least one non-deformable closure member designed to open and close at least one port in said

valve to bring said tank into communication with said tyre when pressure in said tyre is lower than said operating pressure, said elastic element having an elastic constant varying within a temperature range from -50°C to +50°C in such a manner that the valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range,

wherein the elastic element exerts a pressure on the diaphragm which brings the cap to act against the needle, thereby causing the at least one non-deformable closure member to open ~~and close~~ the at least one port.

77. (Previously Presented) The wheel as claimed in claim 76, wherein said temperature range is about -30°C to about +50°C.

78. (Previously Presented) The wheel as claimed in claim 76, wherein said temperature range is about -30°C to about +20°C.

79. (Previously Presented) The wheel as claimed in claim 76, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by at least 10%.

80. (Previously Presented) The wheel as claimed in claim 76, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by no more than 40%.

81. (Previously Presented) The wheel as claimed in claim 77, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by at least 10%.

82. (Previously Presented) The wheel as claimed in claim 77, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by no more than 40%.

83. (Previously Presented) A wheel as claimed in claim 78, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by at least 10%.

84. (Previously Presented) The wheel as claimed in claim 78, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C no more than 40%.

85. (Previously Presented) The wheel as claimed in claim 79, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by at least 20%.

86. (Previously Presented) The wheel as claimed in claim 80, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by no more than 30%.

87. (Previously Presented) The wheel as claimed in claim 81, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by at least 20%.

88. (Previously Presented) The wheel as claimed in claim 82, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by no more than 30%.

89. (Previously Presented) The wheel as claimed in claim 83, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by at least 20%.

90. (Previously Presented) The wheel as claimed in claim 84, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by no more than 30%.

91. (Previously Presented) The wheel as claimed in claim 76, wherein said tank is integrated into said rim.

92. (Previously Presented) The wheel as claimed in claim 76, wherein said tank involves a volume such that the ratio between said volume of said tank and said inner volume of the tyre is about 0.1 to about 0.4.

93. (Previously Presented) The wheel as claimed in claim 92, wherein said ratio is about 0.12 to about 0.25.

94. (Previously Presented) The wheel as claimed in claim 76, wherein said elastic element is a spring.

95. (Previously Presented) The wheel as claimed in claim 76, wherein said elastic constant decreases on decreasing of the temperature in said temperature range.

96. (Previously Presented) The wheel as claimed in claim 76, wherein said elastic constant increases on decreasing of the temperature in said temperature range.

97. (Previously Presented) The wheel as claimed in claim 76, wherein said valve brings said tyre into communication with said tank when pressure in said tyre is lower by at least 5% than said operating pressure.

98. (Previously Presented) The wheel as claimed in claim 76, wherein said wheel comprises an inflation valve operatively associated with said tank.

99. (Previously Presented) The wheel as claimed in claim 76, wherein said wheel comprises a control and restoration valve associated with said tyre.

100. (Previously Presented) The wheel as claimed in claim 94, wherein said elastic element comprises a second spring operatively associated with said spring.

101. (Previously Presented) The wheel as claimed in claim 100, wherein said second spring has an elastic constant substantially constant within a temperature range of -50°C to +50°C.

102. (Previously Presented) The wheel as claimed in claim 101, wherein said second spring supports a greater portion of the load than said elastic element.

103. (Previously Presented) The wheel as claimed in claim 102, wherein the load supported by the second spring is about 60% to about 95% of the load supported by said elastic element.

104. (Previously Presented) The wheel as claimed in claim 102, wherein the load supported by the second spring is about 70% to about 80% of the load supported by said elastic element.

105. (Previously Presented) The wheel as claimed in claim 100, wherein the second spring is concentrically coupled to said spring.

106. (Previously Presented) The wheel as claimed in claim 105, wherein the second spring is external with respect to said spring.

107. (Currently Amended) A valve suitable for a wheel having a controlled and compensated pressure, said valve being adapted to regulate communication between a tank and an inner volume of a tyre provided in said wheel, said valve comprising:

a diaphragm;

a cap;

a needle; and

at least one elastic element operatively associated with at least one non-deformable closure member designed to open and close at least one port in said valve to bring said tank into communication with said tyre when pressure in said tyre is lower than an operating pressure, said elastic element having an elastic constant varying within a temperature range from -50°C to +50°C in such a manner that the valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range,

wherein the elastic element exerts a pressure on the diaphragm which brings the cap to act against the needle, thereby causing the at least one non-deformable closure member to open ~~and close~~ <u>the</u> at least one port.

108. (Previously Presented) The valve as claimed in claim 107, wherein said temperature range is about -30°C to about +50°C.

109. (Previously Presented) The valve as claimed in claim 107, wherein said temperature range is about -30°C to about +20°C.

110. (Previously Presented) The valve as claimed in claim 107, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by at least 10%.

111. (Previously Presented) The valve as claimed in claim 107, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by no more than 40%.

112. (Previously Presented) The valve as claimed in claim 108, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by at least 10%.

113. (Previously Presented) The valve as claimed in claim 108, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by no more than 40%.

114. (Previously Presented) The valve as claimed in claim 109, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by at least 10%.

115. (Previously Presented) The valve as claimed in claim 109, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by no more than 40%.

116. (Previously Presented) The valve as claimed in claim 110, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by at least 20%.

117. (Previously Presented) The valve as claimed in claim 111, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -50°C differing from the value of elastic constant measured at +50°C by no more than 30%.

118. (Previously Presented) The valve as claimed in claim 112, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by at least 20%.

119. (Previously Presented) The valve as claimed in claim 113, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +50°C by no more than 30%.

120. (Previously Presented) The valve as claimed in claim 114, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by at least 20%.

121. (Previously Presented) The valve as claimed in claim 115, wherein said elastic element controlling opening of said port has a value of elastic constant measured at -30°C differing from the value of elastic constant measured at +20°C by no more than 30%.

122. (Previously Presented) The valve as claimed in claim 107, wherein said elastic element is a spring.

123. (Previously Presented) The valve as claimed in claim 107, wherein said elastic constant decreases on decreasing of the temperature in said temperature range.

124. (Previously Presented) The valve as claimed in claim 107, wherein said elastic constant increases on decreasing of the temperature in said temperature range.

125. (Previously Presented) The valve as claimed in claim 107, wherein said valve brings said tyre into communication with said tank when pressure in said tyre is lower by at least 5% than said operating pressure.

126. (Previously Presented) The valve as claimed in claim 122, wherein said elastic element comprises a second spring operatively associated with said spring.

127. (Previously Presented) The valve as claimed in claim 126, wherein said second spring has an elastic constant substantially constant within a temperature range from -50°C to +50°C.

128. (Previously Presented) The valve as claimed in claim 127, wherein said second spring supports a greater portion of the load than said elastic element.

129. (Previously Presented) The valve as claimed in claim 128, wherein the load supported by the second spring is about 60% to about 95% of the load, supported by said elastic element.

130. (Previously Presented) The valve as claimed in claim 128, wherein the load supported by the second spring is about 70% to about 80% of the load supported by said elastic element.

131. (Previously Presented) The valve as claimed in claim 126, wherein the second spring is concentrically coupled to said spring.

132. (Previously Presented) The valve as claimed in claim 131, wherein the second spring is external with respect to said spring.

133. (Previously Presented) A method of controlling an inner pressure of a tyre mounted on a rim, said method comprising the steps of:

inflating an inner volume of the tyre to an operating pressure at a reference temperature;

admitting a fluid compressed to a first pressure higher than the operating pressure of the tyre at the reference temperature into a tank associated with the rim;

bringing the inner volume of said tyre into communication with said tank when the pressure of the inner volume of said tyre is lower than said operating pressure, by means of at least one mechanical valve opening which is controlled by an elastic element having an elastic constant, the elastic element being operatively associated with at least one non-deformable closure member designed to open and close at least one port in said valve, and the elastic constant varying within a temperature range of -50°C to +50°C in such manner that said valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range; and

stopping the communication between said inner volume and the tank when said tyre pressure is substantially equal to said operating pressure,

wherein a ratio between said operating pressure of the tyre and said first pressure in said tank is about 0.1 to about 0.6.

134. (Previously Presented) A method of controlling an inner pressure of a tyre mounted on a rim, said method comprising the steps of:

inflating an inner volume of the tyre to an operating pressure at a reference temperature;

admitting a fluid compressed to a first pressure higher than the operating pressure of the tyre at the reference temperature into a tank associated with the rim;

bringing the inner volume of said tyre into communication with said tank when the pressure of the inner volume of said tyre is lower than said operating pressure, by means of at least one mechanical valve opening which is controlled by an elastic element having an elastic constant, the elastic element being operatively associated with at least one non-deformable closure member designed to open and close at least one port in said valve, and the elastic constant varying within a temperature range of -50°C to +50°C in such manner that said valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range; and

stopping the communication between said inner volume and the tank when said tyre pressure is substantially equal to said operating pressure,

wherein said step of bringing the inner volume of said tyre into communication with said tank takes place when the pressure of the inner volume of said tyre is lower than said operating pressure by at least 5%.

135. (Previously Presented) A method of controlling an inner pressure of a tyre mounted on a rim, said method comprising the steps of:

inflating an inner volume of the tyre to an operating pressure at a reference temperature;

admitting a fluid compressed to a first pressure higher than the operating pressure of the tyre at the reference temperature into a tank associated with the rim;

bringing the inner volume of said tyre into communication with said tank when the pressure of the inner volume of said tyre is lower than said operating pressure, by means of at least one mechanical valve opening which is controlled by an elastic element having an elastic constant, the elastic element being operatively associated with at least one non-deformable closure member designed to open and close at least one port in said valve, and the elastic constant varying within a temperature range of -50°C to +50°C in such manner that said valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range; and

stopping the communication between said inner volume and the tank when said tyre pressure is substantially equal to said operating pressure,

wherein the elastic element is a spring,

wherein the elastic element comprises a second spring operatively associated with the spring, and

wherein a load supported by the second spring is about 60% to about 95% of a load supported by the elastic element.

136. (Currently Amended) A wheel having a controlled and compensated pressure, comprising:

a rim associated with a tank adapted to be filled with a fluid to a first pressure;

a tyre mounted on said rim and having an inner volume inflated to an operating pressure, said operating pressure being lower than said first pressure; and

at least one valve adapted to regulate communication between said tank and the inner volume of said tyre,

said valve comprising at least one elastic element operatively associated with at least one movable non-deformable closure member designed to open and close at least one port in said valve to bring said tank into communication with said tyre when pressure in said tyre is lower than said operating pressure, said elastic element having an elastic constant varying within a temperature range from -50°C to +50°C in such a manner that the valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range,

wherein the elastic element is a spring,

wherein the elastic element comprises a second spring operatively associated with the spring, and

wherein a load supported by the second spring is about 60% to about 95% of a load supported by the elastic element.